REMARKS

Reconsideration is respectfully requested in light of the foregoing amendments and remarks, which follow.

Claims 1, 4 and 6-9 are before the Examiner. Claim 1 .

Rejections under 35 USC 112

Claims 1-4 and 6-9 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicants respectfully traverse.

The points raised in the Official Action has been addressed by making the changes equivalent to those suggested by the Examiner. The rejection is thought to have been rendered moot thereby.

Rejection under 35 USC 103

Claims 1-4 and 6-9 are rejected under 35 USC 103 as being unpatentable over Lowell et al. (v) or Smith et al. (W) or Averaham et al. (X) in view of Ratner et al. Applicants respectfully traverse.

The claims have been limited to the preferred ratio range of proteosome to gp160. The ratio, on its face, does not appear to be a recognized result dependent variable. In addition, claims 9-11 recite preparative steps for preparing the complex, e.g. mere mixing, mere dialysis and mere lyophilization, not expected by the references of record to

result in active complexes. Claims 3 and set forth the presence of an adjuvant, which would result in the 1.5 fold increase in antibody formation. New claim 12 set fort a composition having a submicron emulsion (SEM) which also correlates with enhanced antibody yields, though not as high as alum. See Table 6.

The Examiner's position, as set forth in the Official Action, is that the general teaching provided in the primary references are applicable to any and all proteins or peptides and that it would be reasonable to expect that "improved" immunogenicity would result.

It is again submitted that the Smith et al. and Aversham et al. documents are silent as to the details of the technique(s) employed. The Lowell et al. article is also a limited teaching.

The instant specification clearly evidences variations in the degree of immunogenicity achieved by the different techniques and also with the variety of the peptide or protein treated. Note Table 4 and the statement starting on line 19 of page 23. There is a degree of unpredictability. The rationale provided by the Examiner is akin to an obvious to try rationale, especially when one considers the full scope of the claims.

It should be further noted gp160 is a transmembrane protein. It is much larger than the exemplified recombinant R32ft (a hydrophobic decapeptide). The specification treats them as distinct chemical entities. Gp160 forms trimers which results in

"molecular complexes" having significantly larger molecular weights than the decapeptide. Even with this size, the immunogenicity of the trimeric complex is enhanced with proteosomes and still more enhanced by the presence of adjuvants, such as alum, and also by the presence of submicron emulsions (SEM). This behavior is distinct from gp41 and Alex 10. See table 6 on page 40 of the instant specification. The Gp41 titers show a decrease from 680 to 565, when complexed with proteosomes, while gp160 titers increase from 30,274 to 51,112. Alex 10 titers decrease from 693 to 200 when submicron emulsions are substituted for alum, while gp160 increase from 51,112 to 104,644, with the same substitution. Clearly there is titer variation amongst the proteins and peptides, even those from the same source, not suggested by the art.

The differences associated with the gp160 titers are not expected from the references. As noted above the claims are not similarly situated relative to the teachings of the references. Clearly claim 1, as amended, is directed to an immunogenic composition having the complex having a limited ratio range of gp160 to proteosome. The complex is further characterized in terms of the effect of the adjuvant in terms of enhanced titer formation.

Even accepting the Examiners premise as generally true, significant titer variation is shown between peptides and protein complexes and also in their manner of preparation. This variation is not expected from the applied art. Further, the degree of

titer improvement for the disclosed gp160complex is not suggested and therefore is unexpected. These results mitigate against the sufficiency of the prima facie case.

For these reasons, withdrawal of the rejection is respectfully requested.

In view of the foregoing, reconsideration and allowance of this application are believed in order, and such action is earnestly solicited.

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Marked Version to Show Changes Made

1. (Amended) An immunogenic composition comprising an antibody inducing effective amount of a construct comprising a proteosome-gp 160 complex, wherein 1) the complex induces the formation of an antibody that binds gp 160 which antibody formation is further enhanced by at least 1.5 fold with an adjuvant, and 2) the proteosome and the gp 160 are present in a ratio which [may] ranges from 1:1 [and] to [1:20] 1:3, and a pharmaceutically acceptable carrier.

Cancel claim 2.

3. (Amended) A composition of claim [2] 1 further comprising an adjuvant.

Cancel claim 6.

7. (Amended) The composition according to claim [6] 1 wherein the ratio [range] is 1:1.

8. (Amended) A method for inducing antibody formation in a host comprising administering an effective amount of the composition of claim 1 to host to induce the formation of an antibody that specifically binds gp160.

9. (Amended) The composition of claim 1 wherein the complex is formed by [mixing gp160 and proteosomes, combining gp160 and proteosomes and then] lyophilizing [or dialyzing] a mixture of gp160 and proteosomes.

10. (Amended) The composition of claim 1 wherein the complex is formed by the dialysis of a mixture of gp160 and proteosomes[and then dialyzing].

11. (New) The composition of claim 1 wherein the complex is formed by mixing gp160 with proteosomes.

12. (New) The composition of claim 1 further comprising submicron emulsions (SEM).